

QA: QA

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
OFFICE OF QUALITY ASSURANCE**

**AUDIT REPORT OCRWM-ARC-99-015**

**OF THE**

**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**AT**

**YUCCA MOUNTAIN SITE CHARACTERIZATION OFFICE  
LAS VEGAS, NEVADA**

**AND**

**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT HEADQUARTERS  
WASHINGTON, D.C.**

**SEPTEMBER 13 THROUGH SEPTEMBER 24, 1999**

**Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_**

**Lester W. Wagner  
Audit Team Leader  
Office of Quality Assurance**

**Approved by: \_\_\_\_\_ Date: \_\_\_\_\_**

**Robert W. Clark  
Acting Director  
Office of Quality Assurance**

## **1.0 EXECUTIVE SUMMARY**

As a result of this Quality Assurance (QA) compliance audit, the audit team determined that, with the exception of those areas where deficiencies existed, the Office of Civilian Radioactive Waste Management (OCRWM) is satisfactorily and effectively implementing examined portions of the QA Program described in the U.S. Department of Energy (DOE), OCRWM Quality Assurance Requirements and Description (QARD), DOE/RW-0333P, Revision 8, and applicable implementing procedures. QA Program Elements 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 13.0, 16.0 and 17.0; Supplements II, III, and V were found to be effectively implemented at both OCRWM Headquarters and Yucca Mountain Site Characterization Office (YMSCO). OCRWM continues to have no activities that implement QARD Appendices A, B and C.

The audit team identified seven conditions adverse to quality during the course of the audit. Two of these deficient conditions resulted in the issuance of OCRWM Deficiency Reports (DR), YMSCO-99-D-101 and YMSCO-99-D-102, which are described in Section 5.5.2 of this report. Five of the deficient conditions required only remedial action that were Corrected During the Audit (CDA) and are detailed in Section 5.5.3 of this report. A total of ten recommendations are identified for OCRWM management's consideration. Eight of the recommendations are the result of this audit and two of the recommendations are the result of Audit OCRWM-ARC-99-014, conducted during the same period on the OCRWM Office of Quality Assurance (OQA). Recommendations five and six were made by that Audit Team and transferred to this report because resolution is the responsibility of YMSCO. Two of the recommendations (numbers seven and eight) offered to YMSCO were not identified at the post-audit meeting, but were discovered later during the review of data provided in the performance of the audit. These recommendations are described Section 6.0 of this report.

The audit team reviewed one open and two closed OCRWM DRs identified during the previous OCRWM OQA audits to determine the status of in-process and effectiveness of completed corrective actions by YMSCO and OCRWM Headquarters. In each case, the effectiveness of corrective actions was found to be satisfactory and no new instances of conditions adverse to quality were revealed. The review is described in Section 5.5.4 of this report.

## **2.0 SCOPE**

This limited scope compliance audit was conducted to evaluate the adequacy of, compliance to, and effectiveness of OCRWM in implementing the QA Program described in the QARD and the applicable implementing procedures. The audit was conducted at both YMSCO in Las Vegas, Nevada and at OCRWM Headquarters in Washington, D.C.

In addition, the audit team reviewed the status of open and closed OCRWM deficiency documents identified during the previous audits of OCRWM to determine the effectiveness of in-process and completed corrective actions by OCRWM. The audit

team conducted interviews and document reviews to evaluate the adequacy, compliance, and effectiveness of implementation of the OCRWM QA program at YMSCO and OCRWM Headquarters.

This audit did not include the OCRWM OQA responsibilities and activities. OQA was audited under a separate audit (OCRWM-ARC-99-014).

The following QA Program Elements/Requirements were evaluated during the audit, in accordance with the approved audit plan:

### **QA PROGRAM ELEMENTS/REQUIREMENTS**

1.0	Organization
2.0	Quality Assurance Program
3.0	Design Control
4.0	Procurement Document Control
5.0	Implementing Documents
6.0	Document Control
7.0	Control of Purchased Items and Services
13.0	Handling, Storage and Shipping
16.0	Corrective Action
17.0	Quality Assurance Records
Supplement II	Sample Control
Supplement III	Scientific Investigation
Supplement V	Control of the Electronic Management of Data
Appendix A	High-Level Waste Form Production
Appendix B	Storage and Transportation
Appendix C	Mined Geologic Disposal System

The following QA Program Elements/Requirements were not reviewed during the audit because they were determined to be not applicable to the work performed by OCRWM or were included in the audit of the OCRWM OQA activities conducted by a separate audit:

8.0	Identification and Control of Items
9.0	Control of Special Processes
10.0	Inspection
11.0	Test Control
12.0	Control of Measuring and Test Equipment
14.0	Inspection, Test and Operating Status
15.0	Nonconformances
18.0	Audits
Supplement I	Software
Supplement IV	Field Surveying

### 3.0 AUDIT TEAM MEMBERS/OBSERVERS

The following is a list of the audit team members and their assigned areas of responsibility:

<u>Name/Title/Organization</u>	<u>QA Program Elements/Requirements</u>
Lester W. Wagner, Audit Team Leader, OQA	1.0, 2.0, 4.0, 7.0 - Las Vegas, Nevada (LV)
John C. Friend, Auditor, OQA	3.0, 17.0 - LV
Robert F. Hartstern, Auditor, OQA	1.0, 2.0 - LV; 1.0, 2.0, 3.0, 5.0, 6.0 – Washington, D. C.
Robert P. Hasson, Auditor, OQA	5.0, 6.0, Supplement V - LV
George Harper, Auditor, OQA	5.0, 6.0, Supplement V - LV
Kenneth O. Gilkerson, Auditor, OQA	13.0, Supplements II, III - LV
James J. George, Auditor, OQA	2.0, 6.0, 7.0, 17.0 – Washington, D.C.
Larry Campbell, Nuclear Regulatory Commission (NRC), Observer	Washington, D.C.

### 4.0 AUDIT MEETINGS AND PERSONNEL CONTACTED

A pre-audit meeting was held at the OCRWM YMSCO office in Las Vegas, Nevada, on September 13, 1999; and at the OCRWM Headquarters office in Washington, D.C., on September 21, 1999. Daily debriefing and coordination meetings were held with OCRWM management and staff, and daily audit team meetings were held to discuss audit status. A preliminary post-audit meeting was held in Las Vegas, Nevada, on September 17, 1999 and in Washington, D.C., on September 23, 1999. The audit was concluded with a final post-audit meeting held in Las Vegas, Nevada on September 24, 1999.

Personnel contacted during the audit, including those who attended pre-audit and post audit meetings, are listed in Attachment 1, "Personnel Contacted During the Audit."

### 5.0 SUMMARY OF AUDIT RESULTS

#### 5.1 Program Effectiveness

The audit team concluded that, overall, with the exceptions of those Program Elements found unsatisfactory, OCRWM is satisfactorily and effectively implementing the QA Program at both YMSCO and Headquarters for the scope of this audit. Currently there are no activities being performed by OCRWM that implement the requirements of the QARD Appendices A, B, and C. The results for each of the QA Program Elements evaluated are contained in Attachment 2, "Summary Table of Audit Results."

## **5.2 Stop Work or Immediate Corrective Action**

There were no Stop Work Orders or immediate corrective actions taken as a result of this audit.

## **5.3 QA Program Implementation**

Attachment 2, "Summary Table of Audit Results," provides results for each QA Program element audited. Details of the audit, including the objective evidence reviewed, are documented in the audit checklists. The checklists are maintained as QA records.

## **5.4 Technical Audit Activities**

There were no technical areas audited.

## **5.5 Summary of Conditions Adverse to Quality**

The audit team identified a total of seven conditions adverse to quality during the audit. Two of these deficient conditions resulted in the issuance of two new OCRWM DRs, YMSCO-99-D-101 and YMSCO-99-D-102. Descriptions of these DRs are documented in Section 5.5.2 of the report. The five remaining deficient conditions identified required only remedial actions and were corrected prior to the post-audit meeting. Details of these CDAs are documented in Section 5.5.3 of the report.

### **5.5.1 Corrective Action Requests (CAR)**

None

### **5.5.2 Deficiency Reports (DR)**

#### **YMSCO-99-D-101**

QARD, Section 5.0, requires that contents of implementing documents include information appropriate to work to be performed. In addition, QARD, Section 2.2.10. states, "Implementing documents and documents that specify technical or quality requirements shall be reviewed to the following requirements and for any additional requirements specified by the applicable section of the QARD:

A. Review criteria shall be established before performing the review. The criteria shall consider applicability, correctness, technical adequacy, completeness, accuracy, and compliance with established requirements."

A sample of the procedures evaluated during the audit identified inaccurate, incorrect, or incomplete information. In addition, several procedures need clarification in the organizational responsibilities and interfaces between OCRWM and the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O).

#### **YMSCO-99-D-102**

QARD, Section 6.2.5.C, states: “The disposition of obsolete or superseded documents shall be controlled to ensure that they are not used to perform work.”

During the audit, it was found that several procedures that had been superseded by new or revised procedures were active in the database and hardcopy distribution.

#### **5.5.3 Deficiencies Corrected During the Audit (CDA)**

Deficiencies considered isolated in nature and only requiring remedial actions can be corrected during the audit. The following deficiencies were identified and corrected during the audit:

1. Procedure QAP 2.6, Revision 4, “Readiness Reviews,” Section 5.1, requires, at the beginning of each fiscal year, that a listing of Statement of Works be developed and identify which are subject to readiness reviews, or a memo be issued indicating that no readiness reviews would be conducted.

No such documents were issued. During the audit, the YMSCO Project Manager issued a memo identifying that the only readiness review to be conducted in FY 1999 would be the “Engineering Design Process Readiness Review.”

2. Procedure QAP 2.6, Section 5.4.2 (8), requires the checklist format to provide for the “dated signature of the Readiness Review Team Members (RRTM) who performed the evaluation.”

The Engineering Design Process Readiness Review checklists did not contain these signatures. In addition, there is no requirement for this dated signature in Section 6.5 of the procedure for completing the checklist. The Director, Site Management Division, informed the audit team that the RRTM did not sign their individual checklists; however, the details from the individual checklists were incorporated into a single “final” checklist that was an attachment to the Readiness Review Report. During the audit, RRTMs signed a statement that the completed “final” checklist adequately reflects the input gathered during their review. This statement will be

included in the record package. In addition, ICN 2 to Revision 3 of QAP 2.6 was approved which added the dated signature to Section 6.5. The actions taken resolved the deficient condition.

3. Procedure QAP 2.6, Sections 5.4.2 (7) and 6.5.d), both require the state of readiness to be identified on the readiness review checklists.

The state of readiness was not identified on the finalized checklist for the Engineering Design Process Readiness Review. During the audit the following information was provided and actions taken to correct this deficiency:

- The Readiness Review Team Lead issued a memo with the following statement: “A decision was made by the team not to make ‘statement of readiness’ determinations on individual checklist items. The checklist determinations were limited to Satisfactory, Unsatisfactory or N/A. The final report provided a synopsis of the checklist results and identified the CRWMS M&O Engineering Design Process as ‘Conditionally Ready.’”
  - ICN 2 to Revision 3 of QAP 2.6 was approved and issued on September 20, 1999, which deletes the requirement in Sections 5.4.2 (7) and 6.5.d) for the state of readiness to be on the checklist.
  - The Engineering Design Process Readiness Review was reported as being the only readiness review performed by OCRWM to date.
4. Procedure QAP 2.5, “Peer Reviews,” Section 5.5.2.d)1), states: “Personnel from an organization that does not have an OCRWM-accepted QA program, verification of education and experience be performed through correspondence with pertinent organizations. Documented evidence of education and experience of Panelists is maintained in accordance with Section 6.0.”

It was found that Section 6.0 does not identify a requirement for these records; however, 5.6.5.1) does make reference to including the Panelist qualifications in the Readiness Review Report. This verification of education and experience for the Panelists performing both the Ceramic Coating and the Drift Seepage Peer Reviews was not available. (Note: QAP 2.5 was replaced by a new AP-2.12Q, effective June 22, 1999, and this requirement is not specified in that procedure). The audit team verified that there is selection criteria established and documented evidence that the selection of candidates was based on those criteria. Verification of qualifications was through each Panelist’s renowned expertise in the professional community and extensive publications on pertinent subject

matter. A statement to this fact was signed by both of the Peer Review Coordinators and, along with the selection criteria and documentation of the each Panelist's qualification, will be included in the records packages. The actions taken resolve the deficient condition.

5. Procedure QAP 2.5, Section 5.6.4.2), states: "Written minutes of meetings, deliberations, and peer review activities are maintained by the Panelists throughout the process for use in preparing the Peer Review Report." Section 6.3 requires these be collected and submitted as Non-QA Inclusionary Records.

No documented minutes were available for the Ceramic Coatings Peer Review. (Note: QAP 2.5 was replaced by a new AP-2.12Q, effective June 22, 1999, and this requirement is not specified in that procedure). On September 16, 1999, the Peer Review Coordinator issued a memo stating that the Ceramic Coating Peer Review Panel conducted peer review activities August 17, 1998 through August 20, 1998. On August 21, 1998, the Panelists distributed their draft portions of the report they had developed to each other for review and comment. The final sections of the report were submitted to the Panel Chairman for final editing and assemblage which was then sent to the Panelists for their final review and signature. Due to the short duration of the final report being generated in the five days of meetings, the report took the role of any meeting minutes. This memo will be included in the record package and resolves the deficient condition.

#### **5.5.4 Follow-up of Previously Identified Deficiency Documents**

##### **YMSCO-98-D-125**

The DR documented that the Requirements Traceability Network (RTN) Report for OCRWM has not been revised to reflect changes (i.e., revisions and cancellations) to implementing procedures. During the audit a review of several procedures recently developed found that the requirements matrix was being revised as required; however, it was noted that there is no requirement in Procedure AP-5.1Q, Revision 0, "Procedure Preparation, Review, and Approval," to review and revise an existing requirement matrix when preparing a change. This deficiency was identified as an example in the new DR YMSCO-D-99-101. DR YMSCO-98-D-125 remains open.



**YMSCO-98-D-126**

The DR identified several instances where QA records did not contain required QA designators and where completed QA records were not placed in temporary storage or transmitted to the RPC within 90 days. This DR was satisfactorily resolved, verified, and closed by OQA on June 22, 1999. No new instances of these conditions were identified during the audit.

**YMSCO-98-D-128**

HLP-3.1Q, Revision 0, "Preparation of Civilian Radioactive Waste Management System Requirements Documents (CRD)," require that the preparer of changes to the CRD document on the Requirements Analysis Sheets whether CRD requirements apply to functions or activities subject to the QARD. Analysis Sheets for Revision 4 of the CRD indicated that documentation of QARD applicability was not performed. Revision 1 of HLP 3.1Q was a complete rewrite, and the DR was satisfactorily resolved. A review of Revision 3 of the Waste Acceptance System Requirements Document (WA-SRD) indicated the revised procedure was being followed for completion of Requirement Analysis Sheets. It should be noted that a Document Action Request (DAR) was issued during the audit to cancel HLP-3.1Q. No new instances of these conditions were identified during the audit.

## **6.0 RECOMMENDATIONS**

The following recommendations resulted from the audit and are presented for consideration by the appropriate OCRWM YMSCO and Headquarters management:

**YMSCO**

1. QAP 5.1, Revision 10, "Quality Assurance Program Procedures," QAP-5-1, Revision 7, "Preparation of M&O Quality Assurance Program Documents," and NLP-5-1, Revision 4, "Preparation of M&O Nevada Work Instructions," each specify that related document actions that had entered the review process prior to June 30, 1999 (the effective date of new AP-5.1Q) are to continue to be completed in accordance with the applicable superseded controlling procedure, (i.e., QAP 5.1, or QAP-5-1, or NLP-5-1). A recommendation is made to identify those DARs in process and expedite completion so that QAP 5.1, QAP-5-1, and NLP-5-1 can be canceled to eliminate the confusion caused by the continued presence of these controlled procedures to be superseded. This is only one example and a review of other processes with the potential for similar issues should be performed.

2. By definition, the use of an Expedited Change Notice (ECN) is clearly intended to be limited to activities when a change is necessary to support activities and when the normal Interim Change Notice or revision process would cause unnecessary delays; however, AP-5.1Q provides no limitations or boundaries to the magnitude of the changes allowed, to either the scope or procedural process, by the ECN. Conceivably, an ECN could completely reorganize or reorder the sequence of a technical process, insert new steps, delete existing steps, reassign responsibilities, etc., without the same adequate review and comment resolution process as the original document. Limits should be incorporated in AP-5.1Q on the issuance of an ECN to a “technical procedure.” It is also recommended that Section 5.8.4 of AP-5.1Q be revised to include details on completing Section 3-Evaluation, of the ECN.
3. The DARs and Procedure Action Requests (PAR) issued prior to June 30, 1999, in accordance with the to be superseded procedures QAP 5.1, QAP-5-1 and NLP-5-1, are not identified, tracked or controlled by any database. These procedures are in the process of being cancelled (see Recommendation 1), but the existing DARs and PARs are not currently being tracked as required for the new ones issued to AP-5.1Q. All outstanding PARs and DARs issued prior to June 30, 1999 should be identified and incorporated into the PAR/DAR database so they can be tracked.
4. YLP-5.1Q-YMSCO, Revision 2, “Evaluation of Ongoing Activities,” should be cancelled, since the owner identified there is no intention of its future use.
5. The responsible manager prior to assigning work to individuals as required by AP-2.1Q, is utilizing the Train Serve Database to verify the completion of training. At present there is lag time with required training and completion input. The “Training Assignments” and the completion of training input needs to be incorporated on an expedited basis to ensure managers have adequate up-to-date information for verification.
6. The QARD, Section 2.2.1.A.1, requires each Affected Organization establish a structured system of implementing documents for top down implementation of the QARD. AP-5.1Q refers to Section 3.0 for definitions of Administrative Procedures (AP) and Line Procedures (LP), but does not adequately describe the hierarchy of the existing procedures (Quality Assurance Procedures (QAP), APs, LPs, etc.). During implementation of Process Validation and Reengineering (PVAR), a “Document Hierarchy Chart” was developed which adequately identifies the hierarchy. The “Document Hierarchy Chart” utilized for PVAR should be incorporated into AP-5.1Q.
7. The printouts of the RTN, “Implementing Document Change/Markup Form,” do not specifically and clearly identify the revision/change level of the document. The Review Coordinator “marks-up” this form to identify changes to the “Implementing Requirements” of the RTN to reflect a document revision. To provide the Review Coordinator with assurance that the RTN form being used is the most current form and that it is applicable to the revision/change level of the document being revised, this RTN

form title should be revised to display the procedure number and the revision/change level of the procedure to which it applies.

8. The DARs database contains DAR related information available in a number of sorts; however, the DARs database does not have a sort by DAR Number. If the only knowledge of a DAR is its number, e.g., 22686, the DAR can not be found except by a time-consuming visual search of one or more of the available sorts. The DAR database should be modified to add a sort of DARs by number, which would also display at least the related document number and the status of the DAR.

### **Headquarters**

9. HLP-2.10Q, Revision 0, "Hold Points," should be cancelled, since the owner identified there is no intention of its future use.
10. Two Memorandum of Agreements (MOA) have been issued between OCRWM and other OCRWM Affected Organizations in accordance with the QARD, Section 1.33.C. One, titled "MOA for Acceptance of Department of Energy Spent Nuclear Fuel and High-Level Radioactive Waste," Revision 1, dated January 1999, is with the DOE Office of Environmental Management. The second, titled "MOA for Acceptance of Naval Spent Nuclear Fuel," dated September 2, 1998, is with the Department of Navy, Naval Nuclear Propulsion Program. Both MOAs identify the WA-SRD in Appendix C for CRWMS Acceptance Criteria, but they are not listed in Section I.C, "Documents Required For Implementation." The WA-SRD should be referenced in the two MOAs in Section I.C.

## **7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During the Audit  
Attachment 2: Summary Table of Audit Results

## ATTACHMENT 1

### Personnel Contacted During the Audit

Name	Organization/Title	Pre-Audit Meeting*	Contacted During Audit	Preliminary Post-Conference YMSCO	Preliminary Post-Conference Wash, D.C.	Post-Audit Meeting
Adams, Jerri	DOE/Office of Project Support (OPS), Director	X		X		X
Allen, Cheryl	NSNF/Lockheed Martin Idaho Technologies Company (LMITCO), Auditor			X		X
Bauer, Linda K.	DOE/YMSCO, Deputy Director	X	X			
Beckwith, Stewart	Project Control Board Action Officer		X			
Bishop, M. L.	Management & Technical Services (MTS)	X				
Brocoum, Stephan	DOE/YMSCO, Assistant Manager	X		X		X
Brodsky, Mitchell G.	General Engineer, Office of Project Control	X	X			
Campbell, Larry L.	NRC/High Level Waste Branch, Senior QA Engineer	X				
Carlson, James H.	DOE, Director, Waste Acceptance & Transportation	X	X			
Carter, Sharon A.	DOE, OPS		X			
Clark, Robert W.	OQA/Acting Director	X				X
Coleman, Drew	OCRWM/Assistant Manager, Office of Project Execution (OPE)		X			
Compton, Jim	OCRWM/YMP, OPM	X				
Cooper, Emily	OCRWM/Assistant Manager, OPE Staff		X			
Daniel, Paul R.	MTS, Peer Review Coordinator		X			
Doyle, John	OQA/Quality Assurance Technical Support Services (QATSS), Senior QA Specialist		X			
Dyer, J. R.	DOE/YMSCO, Project Manager	X		X		X
Eshleman, Michael	OQA/QATSS, Senior QA Specialist					X
Ferreiro, Gloria M.	CRWMS M&O, Training		X			
Friend, John C.	OQA/QATSS, Auditor	X				
Garrett, Chuck	Title III, Lead		X			
George, James	OQA/QATSS/RW-3, Senior QA Specialist	X			X	X
Gil, April V.	DOE/YMSCO/Office of Licensing & Regulatory Compliance, Team Leader	X	X			
Gilkerson, K. O.	OQA/QATSS, Auditor	X		X		X
Greene, Hank	OQA/QATSS, Quality Systems Manager			X		X
Griffith, Ronnie	Field Records Clerk		X			
Hamilton-Ray, Birdie	DOE/OPS, Acting Deputy Director	X	X	X		X
Hampton, Catherine	DOE/OPE, Analyst	X	X	X		X
Hang, Julie	Records Review Coordinator		X			
Harper, George T.	OQA/QATSS, Audit Team Member	X		X		X

Name	Organization/Title	Pre-Audit Meeting*	Contacted During Audit	Preliminary Post-Conference YMSCO	Preliminary Post-Conference Wash, D.C.	Post-Audit Meeting
Harris, Donald J.	OQA/QATSS, Auditor		X			X
Hartstern, Robert F.	OQA/QATSS, Senior QA Specialist	X	X	X	X	X
Hasson, Robert P.	OQA/QATSS, Audit Lead	X		X		X
Haught, Dave	DOE/YMSCO, Systems Engineer		X			
Horton, D.G.	DOE/YMSCO, Deputy Project Manager	X		X		X
Iorii, Vincent F.	DOE/YMSCO/Director, Site Management Division	X				X
James, Reggie R.	DOE/OPS		X			
Keller, David	Manager, Records Processing		X			
Kratzinger, Frank J.	MTS/GAI, Product Integrity Specialist	X	X	X		X
Lake, William	DOE/RW-45, General Engineer		X			
Lewallen, T. R.	NSNF/LMITCO, Manager, QA Staff			X		X
Lewis, Chris	M&O Sample Management/Drilling Department Manager		X			
Linden, Ronald M.	MTS Peer Review Coordinator		X			
Lukasik, Chris M.	DOE/RW-56, Director, Human Resources Division	X	X		X	
McDaniel, Mary	OQA/QATSS, Senior QA Specialist	X	X			X
Mantor, Linda	Lead, Document Control		X			
Mattimoe, James C.	OQA/QATSS, Program Manager					X
Mele, Raymond	MTS/BAH, Eng. Lead	X	X	X		X
Mellington, Suzane	DOE/YMSCO/OPE, Assistant Manager	X	X	X		X
Moore, Sandra L.	M&O/Document Control, DC Supervisor	X	X	X		X
Mueller, Terry L.	M&O/Supp. Ops., QA Engineer	X		X		X
Mukhopadhyay, B.	MTS Team Lead		X			
Murthy, Ram B.	DOE/RW-3, OQA, Lead			X		X
Opelski, Edward P.	OQA/QATSS, Verification Manager					X
Pollog, Thomas	DOE/RW-44, Nuclear Engineer	X			X	
Pollock, Sharon	DOE/RW-56, Headquarters Training Officer	X	X		X	
Popa, Markus	DOE/RW-44, Engineer	X	X		X	
Rael, Howard	M&O Geologic Logging Coordinator		X			
Replogle, James	OCRWM /AMOPE, Project Management Director		X			
Ridolfi, Diane M.	DOE/OPS		X			
Robinson, Donald	Field Engineer		X			
Rogers, Ralph	MTS Staff Lead		X			
Rouse, Sandra L.	DOE/YMSCO, Training Officer		X			X
Ruffin, Gladys	TRW/RW-60, Records Supervisor	X	X		X	
Salness, Richard A.	MTS Engineer		X			
Savino, John	MTS Staff Lead		X			

Name	Organization/Title	Pre-Audit Meeting*	Contacted During Audit	Preliminary Post-Conference YMSCO	Preliminary Post-Conference Wash, D.C.	Post-Audit Meeting
Senderling, Mark	DOE/RW-46, General Engineer				X	
Shelor, Dwight	DOE/RW-40, Director		X		X	
Skuchko, Sharon	DOE/RW-60, Computer Specialist	X				
Spence, Richard E.	DOE/OPE, Acting Deputy Assistant Manager	X	X	X		X
Therien John E.	OQA/QATSS, QA Program Lead	X				
Thompson, Kathleen	Records Coordinator		X			
Toft, Richard	DOE/MTS, Manager	X		X		X
Trebules, Victor	DOE/YMSCO Director, Office of Project Control	X	X	X		X
Turner, Paul	CRWMS M&O, Training Manager		X			
Tynan, Mark	OCRWM/Assistant Manager, OPE, Staff		X			
Vanderpuy, Mark	DOE/Project Management Office, Special Assistant	X				
Vlahakis, John	DOE/RW-44, Engineer	X			X	
Wagner, Lester W.	OQA/QATSS, Senior QA Specialist	X	X	X	X	X
Warriner, David	DOE, Office of Information Management	X	X	X		X
Weber, Carl	DOE/RW-3, QA Specialist	X	X		X	
Weeks, Richard	OQA Senior QA Specialist		X			
Weiser, J. L.	Operations Manager, Document Control		X			X
Wells, Robert W.	DOE, Director, Office of Information Management		X			
Williams, Jeffrey R.	DOE/RW-46, Director, Systems Engineering	X	X		X	
Wood, Gary D.	OQA/QATSS, Senior QA Specialist	X				
Zabransky, David	DOE/RW-44, Lead	X	X		X	
Zelinski, Bill	M&O (Wooward-Clyde Federal Services) Principal Investigator		X			
Zwahlen, Eric	Performance Assessment Specialist		X			

\* Includes YMSCO and Washington D.C.

## ATTACHMENT 2

### Summary Table of Audit Results

PROGRAM ELEMENT	IMPLEMENTING DOCUMENTS	DETAILS (CHECKLIST)	DEFICIENCIES	RECOMMENDATIONS	PROGRAM ADEQUACY	PROCEDURE COMPLIANCE	OVERALL
1	QAP-1.1	L Pg. 1-2	N	N	SAT	SAT	SAT
		W Pgs. 1-2	N	N	SAT	SAT	
	YLP-1.1Q-YMSCO*	L Pg. 3	N	N	SAT	SAT	
	QARD, 1.33.C	W Pg. 3	N	REC # 10	SAT	SAT	
2	QARD, 2.2.10	L Pg. 4	N	N	SAT	SAT	SAT
	AP-2.1Q	L Pgs. 5-6	N	REC # 5	SAT	SAT	
		W Pgs. 4-5	N	N	SAT	SAT	
	AP-2.2Q	L Pgs. 7-8	N	N	SAT	SAT	
		W Pgs. 6-7	N	N	SAT	NI	
	AP-2.3Q	L Pgs. 9-13	N	N	N/A	N/A	
	AP-AC.1Q	L Pgs. 33-36	N	N	SAT	NI	
	QAP 2.5*	L Pgs. 14-16	CDA #s 4 & 5	N	SAT	SAT	
		W Pgs. 17-19	N	N	SAT	NI	
	QAP 2.6	L Pgs. 17-18	CDA #s 1, 2 & 3	N	SAT	SAT	
		W Pgs. 20-21	N	N	SAT	NI	
	HLP-2.1Q*	W Pgs. 8-16	N	N	SAT	SAT	
3	AP-3.1Q	L Pgs. 37-38	N	N	SAT	NI	SAT
	HLP-3.1Q*	W Pgs. 24-30	N	N	SAT	SAT	
	YAP-3.7Q	L Pg. 39	N	N	SAT	SAT	
4	YLP-4.1Q-YMSCO	L Pgs. 40-46	N	N	SAT	SAT	SAT
5	AP-5.1Q	L Pg. 52	YMSCO-99-D-101	REC # 2, 6, 7 & 8	UNSAT	SAT	SAT
		W Pg. 34	N	N	SAT	NI	
	QAP-5.1*	L Pg. 49-51	N	REC # 1 & # 3	SAT	SAT	
		W Pg. 31-33	N	N	SAT	NI	
	YAP-5.1Q	L Pgs. 53-54	N	N	SAT	SAT	
	YLP-5.1Q-YMSCO	L Pgs. 57-58	N	REC # 4	SAT	SAT	
6	AP-6.1Q	L Pg. 62-64	YMSCO-99-D-102	N	UNSAT	UNSAT	SAT
		W Pgs. 38-40	N	N	SAT	NI	
	QAP-6.2	L Pgs. 59-61	N	N	SAT	SAT	
7	HLP-7.1Q	W Pgs. 41-48	N	N	SAT	SAT	SAT
13	QARD, Section 13.0	L Pg. 65	N	N	SAT	SAT	SAT
	YAP-13.1Q	L Pg. 66	N	N	SAT	SAT	
16	AP-16.4Q	L Pg. 67	N	N	SAT	NI	SAT
17	AP-17.1Q	L Pgs. 68-72	N	N	SAT	SAT	SAT
		W Pgs. 49-52	N	N	SAT	SAT	
	YAP-17.2Q	L Pgs. 73-74	N	N	SAT	SAT	
SII	QARD, Supp. II	L Pg. 75	N	N	SAT	SAT	SAT
	YAP-SII.1Q	L Pgs. 76-77	N	N	SAT	SAT	
	YAP-SII.2Q	L Pg. 78	N	N	SAT	SAT	
	YAP-SII.4Q	L Pg. 79	N	N	SAT	SAT	
SIII	QARD, Supp. III	L Pg. 80	N	N	SAT	SAT	SAT
	YAP-SIII.1Q*	L Pgs. 81-84	N	N	SAT	SAT	
	YAP-SIII.3Q*	L Pgs. 85-86	N	N	SAT	SAT	
	YAP-SIII.4Q	L Pgs. 87-91	N	N	SAT	SAT	
	YAP-SIII.5Q	L Pgs. 92-94	N	N	SAT	SAT	
	YAP-SIII.6Q	L Pg. 95	N	N	SAT	SAT	
V	YAP-SV.1Q	L Pgs. 96-97	N	N	SAT	SAT	SAT
APP A	QARD, Appendix A	W Pg. 53	N	N	NA	NA	NA
APP B	QARD, Appendix B	W Pg. 54	N	N	NA	NA	NA
APP C	QARD, Appendix C	L Pgs. 33-36/40-46	N	N	SAT	NI	NA
<b>Total:</b>		97 Pgs. L 54 Pgs. W	2 DRs 5 CDAs	10 RECs	SATISFACTORY		

**Legend:** CDA-Corrected During Audit; DR-Deficiency Report; L-Las Vegas; N-None; NI-Not Implemented; REC-Recommendation; W-Wash.; NA – No Activities

\* Being superseded by another procedure